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<110> UNO, Yukio
       HIKICHI, Yukiko
       SAGIYA, Yoji
       NAKANISHI, Atsushi

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Leu Gly Cys Ser Val Glu Ile Arg Lys Leu Trp Ser His Ile Arg Arg
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Pro Trp Gly Ile Ala Val Gly Leu Leu Cys Gln Phe Gly Leu Met Pro
65                  70                  75                  80
Phe Thr Ala Tyr Leu Leu Ala Ile Ser Phe Ser Leu Lys Pro Val Gln
                85                  90                  95
Ala Ile Ala Val Leu Ile Met Gly Cys Cys Pro Gly Gly Thr Ile Ser
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Asn Val Phe Thr Phe Trp Val Asp Gly Asp Met Asp Leu Ser Ile Ser
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Ile Leu Lys Ile Gly Ala Val Val Gly Gly Val Leu Leu Leu Val Val
            195                     200                     205
Ala Val Ala Gly Val Val Ala Lys Gly Ser Trp Asn Ser Asp Ile
    210                     215                     220
Thr Leu Leu Thr Ile Ser Phe Ile Phe Pro Ile Gly His Val Thr
225                     230                     235                     240
Gly Phe Leu Leu Ala Leu Phe Thr His Gln Ser Trp Gln Arg Cys Arg
            245                     250                     255
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            275                     280                     285
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Ser Ser Arg Glu Thr Asn Ala Phe Leu Glu Val Asn Glu Glu Gly Ala
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65                  70                  75                  80
Ser Leu Ala Lys Ile Gly Phe His Leu Tyr His Arg Leu Pro Gly Leu
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Met Pro Glu Ser Cys Leu Leu Ile Leu Val Gly Ala Leu Val Gly Gly
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Ile Ile Phe Gly Thr Asp His Lys Ser Pro Pro Val Met Asp Ser Ser
      115                 120                 125
Ile Tyr Phe Leu Tyr Leu Leu Pro Pro Ile Val Leu Glu Gly Gly Tyr
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Phe Met Pro Thr Arg Pro Phe Phe Glu Asn Ile Gly Ser Ile Leu Trp
145                 150                 155                 160
Trp Ala Val Leu Gly Ala Leu Ile Asn Ala Leu Gly Ile Gly Leu Ser
                  165                 170                 175
Leu Tyr Leu Ile Cys Gln Val Lys Ala Phe Gly Leu Gly Asp Val Asn
          180                 185                 190
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Val Ala Val Leu Ala Val Phe Glu Glu Ala Arg Val Asn Glu Gln Leu
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225                 230                 235                 240
Val Leu Tyr Asn Met Leu Ile Ala Phe Thr Lys Met His Lys Phe Glu
                  245                 250                 255
Asp Ile Glu Thr Val Asp Ile Leu Ala Gly Cys Ala Arg Phe Ile Val
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Ala Phe Ile Thr Arg Phe Thr Gln Asn Ile Ser Ala Ile Glu Pro Leu
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Ile Val Phe Met Phe Ser Tyr Leu Ser Tyr Leu Ala Ala Glu Thr Leu
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Tyr Leu Ser Gly Ile Leu Ala Ile Thr Ala Cys Ala Val Thr Met Lys
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Lys Tyr Val Glu Glu Asn Val Ser Gln Thr Ser Tyr Thr Thr Ile Lys
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Tyr Phe Met Lys Met Leu Ser Ser Val Ser Glu Thr Leu Ile Phe Ile
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Ser Ile Lys Asp Gln Cys Ile Ile Phe Tyr Ser Gly Val Arg Gly Ala
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Thr Arg Ala Ala Gly Phe Ser Asp Asp Asp Ser Ser Asp Pro Gly Ser
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Gln Glu Ala Gln Glu Ile Ile Pro Met Lys Ser Leu His Arg Gly Arg
705                     710                     715                     720
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Ala Val Asp Glu Glu Gly Glu Ser Gly Gly Glu Ser Glu Gly Lys Ala
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Ile Ser Thr Ala Lys Tyr Ser Val Leu Thr Phe Leu Pro Arg Phe Leu
        35                  40                  45
Tyr Glu Gln Ile Arg Arg Ala Ala Asn Ala Phe Phe Leu Phe Ile Ala
    50                  55                  60
Leu Leu Gln Gln Ile Pro Asp Val Ser Pro Thr Gly Arg Tyr Thr Thr
65                  70                  75                  80
Leu Val Pro Leu Ile Ile Ile Leu Thr Ile Ala Gly Ile Lys Glu Ile
                85                  90                  95
Val Glu Asp Phe Lys Arg His Lys Ala Asp Asn Ala Val Asn Lys Lys
            100                 105                 110
Lys Thr Ile Val Leu Arg Asn Gly Met Trp His Thr Ile Met Trp Lys
        115                 120                 125
Glu Val Ala Val Gly Asp Ile Val Lys Val Val Asn Gly Gln Tyr Leu
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Pro Ala Asp Val Val Leu Leu Ser Ser Ser Glu Pro Gln Ala Met Cys
145                 150                 155                 160
Tyr Val Glu Thr Ala Asn Leu Asp Gly Glu Thr Asn Leu Lys Ile Arg
                165                 170                 175
Gln Gly Leu Ser His Thr Ala Asp Met Gln Thr Arg Glu Val Leu Met
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Lys Leu Ser Gly Thr Ile Glu Cys Glu Gly Pro Asn Arg His Leu Tyr
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Asp Phe Thr Gly Asn Leu Asn Leu Asp Gly Lys Ser Leu Val Ala Leu
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Gly Pro Asp Gln Ile Leu Leu Arg Gly Thr Gln Leu Arg Asn Thr Gln
225                 230                 235                 240
Trp Val Phe Gly Ile Val Val Tyr Thr Gly His Asp Thr Lys Leu Met
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Gln Asn Ser Thr Lys Ala Pro Leu Lys Arg Ser Asn Val Glu Lys Val
            260                 265                 270
Thr Asn Val Gln Ile Leu Val Leu Phe Gly Ile Leu Leu Val Met Ala
        275                 280                 285
Leu Val Ser Ser Ala Gly Ala Leu Tyr Trp Asn Arg Ser His Gly Glu
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Lys Asn Trp Tyr Ile Lys Lys Met Asp Thr Thr Ser Asp Asn Phe Gly
305                 310                 315                 320
Tyr Asn Leu Leu Thr Phe Ile Ile Leu Tyr Asn Asn Leu Ile Pro Ile
                325                 330                 335
Ser Leu Leu Val Thr Leu Glu Val Val Lys Tyr Thr Gln Ala Leu Phe
            340                 345                 350
Ile Asn Trp Asp Thr Asp Met Tyr Tyr Ile Gly Asn Asp Thr Pro Ala
        355                 360                 365
Met Ala Arg Thr Ser Asn Leu Asn Glu Glu Leu Gly Gln Val Lys Tyr
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Leu Phe Ser Asp Lys Thr Gly Thr Leu Thr Cys Asn Ile Met Asn Phe
385                 390                 395                 400
Lys Lys Cys Ser Ile Ala Gly Val Thr Tyr Gly His Phe Pro Glu Leu
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Ser Asp Ser Cys Asp Phe Asp Asp Pro Arg Leu Leu Lys Asn Ile Glu
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Tyr Gln Ala Ser Ser Pro Asp Glu Ala Ala Leu Val Lys Gly Ala Lys
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Lys Leu Gly Phe Val Phe Thr Ala Arg Thr Pro Phe Ser Val Ile Ile
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Glu Ala Met Gly Gln Glu Gln Thr Phe Gly Ile Leu Asn Val Leu Glu
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Arg Leu Ser Lys Asp Ser Lys Tyr Met Glu Glu Thr Leu Cys His Leu
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Glu Tyr Phe Ala Thr Glu Gly Leu Arg Thr Leu Cys Val Ala Tyr Ala
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Asp Leu Ser Glu Asn Glu Tyr Glu Glu Trp Leu Lys Val Tyr Gln Glu
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Ala Ser Thr Ile Leu Lys Asp Arg Ala Gln Arg Leu Glu Glu Cys Tyr
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Asp Arg Leu Gln Ala Gly Val Pro Glu Thr Ile Ala Thr Leu Leu Lys
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Ala Glu Ile Lys Ile Trp Val Leu Thr Gly Asp Lys Gln Glu Thr Ala
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Ile Asn Ile Gly Tyr Ser Cys Arg Leu Val Ser Gln Asn Met Ala Leu
    675                 680                 685
Ile Leu Leu Lys Glu Asp Ser Leu Asp Ala Thr Arg Ala Ala Ile Thr
    690                 695                 700
Gln His Cys Thr Asp Leu Gly Asn Leu Leu Gly Lys Glu Asn Asp Val
705                 710                 715                 720
Ala Leu Ile Ile Asp Gly His Thr Leu Lys Tyr Ala Leu Ser Phe Glu
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Val Arg Arg Ser Phe Leu Asp Leu Ala Leu Ser Cys Lys Ala Val Ile
    740                 745                 750
Cys Cys Arg Val Ser Pro Leu Gln Lys Ser Glu Ile Val Asp Val Val
    755                 760                 765
Lys Lys Arg Val Lys Ala Ile Thr Leu Ala Ile Gly Asp Gly Ala Asn
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785                 790                 795                 800
Asn Glu Gly Met Gln Ala Thr Asn Asn Ser Asp Tyr Ala Ile Ala Gln
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Phe Ser Tyr Leu Glu Lys Leu Leu Leu Val His Gly Ala Trp Ser Tyr
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Asn Arg Val Thr Lys Cys Ile Leu Tyr Cys Phe Tyr Lys Asn Val Val
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Leu Tyr Ile Ile Glu Leu Trp Phe Ala Phe Val Asn Gly Phe Ser Gly
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Gln Ile Leu Phe Glu Arg Trp Cys Ile Gly Leu Tyr Asn Val Ile Phe
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Thr Ala Leu Pro Pro Phe Thr Leu Gly Ile Phe Glu Arg Ser Cys Thr
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Gln Glu Ser Met Leu Arg Phe Pro Gln Leu Tyr Lys Ile Thr Gln Asn
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Gly Glu Gly Phe Asn Thr Lys Val Phe Trp Gly His Cys Ile Asn Ala
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Leu Val His Ser Leu Ile Leu Phe Trp Phe Pro Met Lys Ala Leu Glu
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His Asp Thr Val Leu Thr Ser Gly His Ala Thr Asp Tyr Leu Phe Val
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Trp Pro Thr Ile Pro Ile Ala Pro Asp Met Arg Gly Gln Ala Thr Met
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Val Leu Ser Ser Ala His Phe Trp Leu Gly Leu Phe Leu Val Pro Thr
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Ala Cys Leu Ile Glu Asp Val Ala Trp Arg Ala Ala Lys His Thr Cys
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Val Leu Gly Lys Val Leu Arg Asp Ser Asn Gly Lys Arg Leu Asn
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Glu Arg Asp Arg Leu Ile Lys Arg Leu Gly Arg Lys Thr Pro Pro Thr
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Leu Phe Arg Gly Ser Ser Leu Gln Gln Gly Val Pro His Gly Tyr Ala
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<213> Human

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<220>
<223> Primer

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<210> 65
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<212> DNA
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Gly Phe Glu Pro Asn Pro Thr Val Ala Lys Thr Ser Pro Pro Val Phe
    50                  55                  60
Ser Lys Pro Met Asp Ser Asn Ile Arg Gln Cys Ile Ser Gly Asn Cys
65                  70                  75                  80
Asp Asp Met Asp Ser Pro Gln Asn Ser Pro Gln Asp Asp Val Thr Glu Thr
                85                  90                  95
Pro Ser Asn Pro Asn Ser Pro Ser Ala Gln Leu Ala Lys Glu Glu Gln
            100                 105                 110
Arg Arg Lys Lys Arg Arg Leu Lys Lys Arg Ile Phe Ala Ala Val Ser
        115                 120                 125
Glu Gly Cys Val Glu Glu Leu Val Glu Leu Leu Val Glu Leu Gln Glu
    130                 135                 140
Leu Cys Arg Arg Arg His Asp Glu Asp Val Pro Gln Phe Leu Met His
145                 150                 155                 160
Lys Leu Thr Ala Ser Gly Thr Gly Lys Thr Cys Ser Leu Met Lys Ala Leu
                165                 170                 175
Leu Asn Ile Asn Pro Asn Thr Lys Glu Ile Val Arg Ile Leu Leu Ala
            180                 185                 190
Phe Ala Glu Glu Asn Asp Ile Leu Gly Arg Phe Ile Asn Ala Glu Tyr
        195                 200                 205
Thr Glu Glu Ala Tyr Glu Gly Gln Thr Ala Leu Asn Ile Ala Ile Glu
    210                 215                 220
Arg Arg Gln Gly Asp Ile Ala Ala Leu Leu Ile Ala Ala Gly Ala Asp
225                 230                 235                 240
Val Asn Ala His Ala Lys Gly Ala Phe Phe Asn Pro Lys Tyr Gln His
                245                 250                 255
Glu Gly Phe Tyr Phe Gly Glu Thr Pro Leu Ala Leu Ala Ala Cys Thr
            260                 265                 270
Asn Gln Pro Glu Ile Val Gln Leu Leu Met Glu His Glu Gln Thr Asp
        275                 280                 285
Ile Thr Ser Arg Asp Ser Arg Gly Asn Asn Ile Leu His Ala Leu Val
    290                 295                 300
Thr Val Ala Glu Asp Phe Lys Thr Gln Asn Asp Phe Val Lys Arg Met
305                 310                 315                 320
Tyr Asp Met Ile Leu Leu Arg Ser Gly Asn Trp Glu Leu Glu Thr Thr
                325                 330                 335
Arg Asn Asn Asp Gly Leu Thr Pro Leu Gln Leu Ala Ala Lys Met Gly
            340                 345                 350
Lys Ala Glu Ile Leu Lys Tyr Ile Leu Ser Arg Glu Ile Lys Glu Lys
        355                 360                 365
Arg Leu Arg Ser Leu Ser Arg Lys Phe Thr Asp Trp Ala Tyr Gly Pro
    370                 375                 380
Val Ser Ser Ser Leu Tyr Asp Leu Thr Asn Val Asp Thr Thr Thr Asp
385                 390                 395                 400
Asn Ser Val Leu Glu Ile Thr Val Tyr Asn Thr Asn Ile Asp Asn Arg
            405                 410                 415
His Glu Met Leu Thr Leu Glu Pro Leu His Thr Leu Leu His Met Lys
        420                 425                 430
Trp Lys Lys Phe Ala Lys His Met Phe Phe Leu Ser Phe Cys Phe Tyr
    435                 440                 445
Phe Phe Tyr Asn Ile Thr Leu Thr Leu Val Ser Tyr Tyr Arg Pro Arg
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Glu Glu Glu Ala Ile Pro His Pro Leu Ala Leu Thr His Lys Met Gly
465                 470                 475                 480
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Trp Leu Gln Leu Leu Gly Arg Met Phe Val Leu Ile Trp Ala Met Cys
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Ile Ser Val Lys Glu Gly Ile Ala Ile Phe Leu Leu Arg Pro Ser Asp
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Leu Gln Ser Ile Leu Ser Asp Ala Trp Phe His Phe Val Phe Phe Ile
      515                 520                 525
Gln Ala Val Leu Val Ile Leu Ser Val Phe Leu Tyr Leu Phe Ala Tyr
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Lys Glu Tyr Leu Ala Cys Leu Val Leu Ala Met Ala Leu Gly Trp Ala
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Val Met Ile Gln Lys Val Ile Leu His Asp Val Leu Lys Phe Leu Phe
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Val Tyr Ile Val Phe Leu Leu Gly Phe Gly Val Ala Leu Ala Ser Leu
      595                 600                 605
Ile Glu Lys Cys Pro Lys Asp Asn Lys Asp Cys Ser Ser Tyr Gly Ser
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Phe Ser Asp Ala Val Leu Glu Leu Phe Lys Leu Thr Ile Gly Leu Gly
625                 630                 635                 640
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              645                 650                 655
Leu Leu Ile Thr Tyr Val Ile Leu Thr Phe Val Leu Leu Leu Asn Met
          660                 665                 670
Leu Ile Ala Leu Met Gly Glu Thr Val Glu Asn Val Ser Lys Glu Ser
      675                 680                 685
Glu Arg Ile Trp Arg Leu Gln Arg Ala Arg Thr Ile Leu Glu Phe Glu
  690                 695                 700
Lys Met Leu Pro Glu Trp Leu Arg Ser Arg Phe Arg Met Gly Glu Leu
705                 710                 715                 720
Cys Lys Val Ala Glu Asp Asp Phe Arg Leu Cys Leu Arg Ile Asn Glu
              725                 730                 735
Val Lys Trp Thr Glu Trp Lys Thr His Val Ser Phe Leu Asn Glu Asp
          740                 745                 750
Pro Gly Pro Val Arg Arg Thr Ala Asp Phe Asn Lys Ile Gln Asp Ser
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Ser Arg Asn Asn Ser Lys Thr Thr Leu Asn Ala Phe Glu Glu Val Glu
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Glu Phe Pro Glu Thr Ser Val
785                 790
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gcacacttct tcctggagat agaaggggttt gaacccaacc ccacagttgc caagacctct     180
cctcctgtct tctccaagcc catggattcc aacatccggc agtgcatctc tggtaactgt     240
gatgacatgg actcccccca gtctcctcaa gatgatgtga cagagacccc atccaatccc     300
aacagcccca gtgcacagct ggcaaggaa gagcagagga ggaaaaaag gcggctgaag     360
aagcgcatct ttgcagccgt gtctgagggc tgcgtggagg agttggtaga gttgctggtg     420
gagctgcagg agctttgcag gcgcgcgcat gatgaggatg tgcctgactt cctcatgcac     480
aagtgacgg cctccgacac ggggaagacc tgcctgatga aggccttgtt aaacatcaac     540
cccaacacca aggagatcgt gcggatcctg cttgcctttg ctgaagagaa cgacatcctg     600
ggcaggttca tcaacgccga gtacacagag gaggcctatg aagggcagc atggcttctac     660
atcgccatcg agcggcggca ggggacatc gcagccctgc tcatcgccgc cggcgccgac     720
gtcaacgcgc acgccaaggg ggcttcttc aacccaagt accaacacga aggcttctac     780
ttcggtgaga cgcccctggc cctggcagca tgcaccaacc agcccgagat tgtgcagctg     840
ctgatggagc acgagcagac ggacatcacc tcgcgggact cacgaggcaa caacatcctt     900
cacgccctgg tgaccgtggc cgaggacttc aagacgcaga atgactttgt gaagcgcatg     960
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ctcagtcgtg agatcaagga gaagcggctc cggagccgt ccaggaagtt caccgactgg  1140
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<210> 70
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<212> DNA
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<220>
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<400> 70
actcactata gggctcgagc ggc   23

<210> 71
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<220>
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<400> 71
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<220>
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actgcgtcgc tgaagctgcc gtaggag   27

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<211> 29
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<220>
<223> Primer

<400> 78
tcccattctc tttctgttcc tgctcatca   29

<210> 79
<211> 29
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<220>
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<400> 81
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<400> 82
gctctgggtt ccgcttctac ac   22

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<400> 83
atgaaagccc accccaagga gatg   24

<210> 84
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<400> 84
ctacaccgag gtttccggga attc   24

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<210> 86
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<220>
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<400> 86
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<210> 87
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<400> 93
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<212> DNA
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accaaggaga tagtgcggat cctgcttgcc tttgctg   697

<210> 98
<211> 275
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tcctctaggt ccttaggag gtgatagtca tcgctgtccc tgcaatgaga gcttcccgcc   180
gcctcagcca cagtcccacc cgggggcctt gggccccaga catgcggtga tctcagggca   240
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Page 32

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<210> 104
<211> 373
<212> PRT
<213> Mouse

<400> 104

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Met Ser Thr Asp Cys Ala Gly Asn Ser Thr Cys Pro Val Asn Ser Thr
                   5   10   15
Glu Glu Asp Pro Pro Val Gly Met Glu Gly His Ala Asn Leu Lys Leu
             20   25   30
Leu Phe Thr Val Leu Ser Ala Val Met Val Gly Leu Val Met Phe Ser
         35   40   45
Phe Gly Cys Ser Val Glu Val Ser Gln Lys Leu Trp Leu His Leu Arg Arg
     50   55   60
Pro Trp Gly Ile Ala Val Gly Leu Leu Ser Gln Phe Gly Leu Met Pro
65   70   75   80
Leu Thr Ala Tyr Leu Leu Ala Ile Gly Phe Gly Leu Lys Pro Phe Gln
             85   90   95
Ala Ile Ala Val Leu Met Met Gly Ser Cys Pro Gly Gly Thr Ile Ser
         100   105   110
Asn Val Leu Thr Phe Trp Val Asp Gly Asp Met Asp Leu Ser Ile Ser
     115   120   125
Met Thr Thr Cys Ser Thr Val Ala Ala Leu Gly Met Met Pro Leu Cys
 130   135   140
Leu Tyr Ile Tyr Thr Arg Ser Trp Thr Leu Thr Gln Asn Leu Val Ile
145   150   155   160
Pro Tyr Gln Ser Ile Gly Ile Thr Leu Val Ser Leu Val Val Pro Val
             165   170   175
Ala Ser Gly Val Tyr Val Asn Tyr Arg Trp Pro Lys Gln Ala Thr Val
         180   185   190
Ile Leu Lys Val Gly Ala Ile Leu Gly Gly Met Leu Leu Val Leu Val
     195   200   205
Ala Val Thr Gly Met Val Leu Ala Lys Gly Trp Asn Thr Asp Val Thr
 210   215   220
Leu Leu Val Ile Ser Cys Ile Phe Pro Leu Val Gly His Val Thr Gly
225   230   235   240
Phe Leu Leu Ala Phe Leu Thr His Gln Ser Trp Gln Arg Cys Arg Thr
             245   250   255
Ile Ser Ile Glu Thr Gly Ala Gln Asn Ile Gln Leu Cys Ile Ala Met
         260   265   270
Leu Gln Leu Ser Phe Ser Ala Glu Tyr Leu Val Gln Leu Leu Asn Phe
     275   280   285
Ala Leu Ala Tyr Gly Leu Phe Gln Val Leu His Gly Leu Leu Ile Val
 290   295   300
Ala Ala Tyr Gln Ala Tyr Lys Arg Arg Gln Lys Ser Lys Cys Arg Arg
305   310   315   320
Gln His Pro Asp Cys Pro Asp Val Cys Tyr Glu Lys Gln Pro Gly Glu
             325   330   335
Thr Ser Ala Phe Leu Asp Lys Gly Asp Glu Ala Ala Val Thr Leu Gly
         340   345   350
Pro Val Gln Pro Glu Gln His His Arg Ala Ala Glu Leu Thr Ser His
     355   360   365
Ile Pro Ser Cys Glu
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<210> 105
<211> 1119
<212> DNA

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<213> Mouse

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atggtgggtt tggtcatgtt ctctttgga tgttctgtgg agagtcagaa gctctggttg  180
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ccgtatcaga gcataggaat taccctttgtg tccctggtgg ttcctgtggc ttctggcgtc  540
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<210> 106
<211> 24
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<220>
<223> Primer

<400> 106
gacctgccca gtgcttgcta ctca                                          24

<210> 107
<211> 24
<212> DNA
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<220>
<223> Primer

<400> 107
tcttcactgg ccacggagga ggat                                          24

<210> 108
<211> 21
<212> DNA
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<220>
<223> Primer

<400> 108
ctattgctgt cctcatgatg g                                             21

<210> 109
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer
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<210> 110
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<220>
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ccatcatgag gacagcaata g                                              21

<210> 111
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<220>
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<400> 111
gagaaggaca gctgcagcat g                                              21

<210> 112
<211> 1237
<212> DNA
<213> Mouse

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<210> 113
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 113
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cttctggcgt ctatgtgaat tatagg   26

<210> 114
<211> 19
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<220>
<223> Primer

<400> 114
gagcatgcca cccagaatg   19

<210> 115
<211> 29
<212> DNA
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<220>
<223> Probe

<400> 115
caaagcaagc aacggtcatt ctcaaggtc   29

<210> 116
<211> 1046
<212> DNA
<213> Rat

<220>
<221> misc_feature
<222> (811)..(812)
<223> a, c, g or t

<400> 116
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attgccgtcc tcatcatggg gagctgccct gggggcaccg tctctaatgt cctcaccttc   300
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<210> 117
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<220>
<223> Primer

<400> 117

atgagcgcag actgcgaggg caa   23

<210> 118
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<212> DNA
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<220>
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<400> 118
tcccactatt cacatgaagg aacg   24

<210> 119
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<212> DNA
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<220>
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<400> 119
tccggcatct atgtgaatta tagg   24

<210> 120
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<220>
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<400> 120
taactgccac caccaggagg   20

<210> 121
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<212> DNA
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<220>
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<400> 121
agcaagcaac attcattctc aaggtcgg   28

<210> 122
<211> 36
<212> DNA
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<220>
<223> Primer

<400> 122
taggaagctt gtcgacatga gagccaattg ttccag   36

<210> 123
<211> 38
<212> DNA
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<220>

<223> Primer

<400> 123
aatgtctaga actagtctat tcacatgaag tgatgtgg   38

<210> 124
<211> 18
<212> DNA
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<220>
<223> Primer

<400> 124
tagaaggcac agtcgagg   18

<210> 125
<211> 317
<212> DNA
<213> Mouse

<400> 125
ccggaggaac ctgccaaaat caagcatcgt ttctttgtat aagaagctgg agatgaaaca   60
ggccattgag atggtagaga ctgggatact gagctctgtg gcttctccca caccctatca   120
gtctgagagg atacagggaa tcaagcggct ttctcctgaa gacgtggagt ccatgcggga   180
cattctgaca agaagcatgt accaagttcg acaaagaacc ctatcctaca acaaatacaa   240
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cttgagggag agcatgc   317

<210> 126
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<220>
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<400> 126
ccggaggaac ctgccaaaat caa   23

<210> 127
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<212> DNA
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<220>
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<400> 127
gcatgctctc cctcaaggtg ttctgg   26

<210> 128
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<220>
<223> Primer

<400> 128
gatgaaacag gccattgaga tg   22

<210> 129

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<211> 25
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<220>
<223> Primer

<400> 129
gattccctgt atcctctcag actga                                              25

<210> 130
<211> 24
<212> DNA
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<220>
<223> Probe

<400> 130
ctgggatact gagctctgtg gctt                                               24

<210> 131
<211> 363
<212> DNA
<213> Rat

<400> 131
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cagtgacaat gaaaaagtac gtggaagaga acgtgtccca gacgtcgtac acgaccatca       240
agtacttcat gaagatgctg agcagcgtga gcgagaccct catcttcatc ttcatgggcg       300
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<210> 132
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<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 132
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<210> 133
<211> 24
<212> DNA
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<220>
<223> Primer

<400> 133
agaaggccag ggtgaagcag acga                                               24

<210> 134
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<212> DNA
<213> Artificial Sequence

<220>
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<223> Primer

<400> 134
agcagccgag acgctttatc t   21

<210> 135
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<220>
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<210> 136
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<212> DNA
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<220>
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<400> 136
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<210> 137
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<220>
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<210> 139
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<220>
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<400> 139
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<210> 140
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<210> 141
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<210> 142
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<220>
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<400> 142
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<210> 143
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<400> 144
gccatcgcac agttttccta cct   23

<210> 145
<211> 24
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<210> Artificial Sequence

<220>
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<400> 145
catcctcttt ccgttactgt ctcg   24

<210> 146
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<212> DNA
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<400> 146
aaccatctgg ccgaccatc   19

<210> 147
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<220>
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<400> 147
acgcagagct caggaccata g   21

<210> 148
<211> 24
<212> DNA
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<220>
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<400> 148
tgcctgccct ttcatgtcag gagc   24

<210> 149
<211> 771
<212> DNA
<213> Rat

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<210> 150
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<212> DNA
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<220>
<223> Primer

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<210> 151
<211> 21
<212> DNA
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<220>
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<400> 151
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<210> 152
<211> 28
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<220>
<223> Primer

<400> 152
catagttgcc tgccctttca tgtcagga   28

<210> 153
<211> 37
<212> DNA
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<220>
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<400> 153
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<210> 154
<211> 43
<212> DNA
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<220>
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<400> 154
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<210> 155
<211> 1064
<212> DNA
<213> Mouse

<400> 155
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ttcccgggga aacaacatcc tgcacgcgct ggtgacggtg gctgaggact tcaagactca   120
gaatgacttc gttaagcgca tgtatgacat gatcctgctg aggagtggca actgggagct   180
ggagaccatg cgcaacaacg atgggctcac gccactgcag ctggctgcca agatgggcaa   240

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ggctgagatc ctgaagtaca tcctcagccg cgagatcaag gagaagcctc tccggagctt   300
gtccaggaag ttcacggact gggcgtatgg gcctgtgtca tcctcactct atgacctcac   360
caatgtagac acaacgacgg ataatctgt gctggaaatc atcgtctaca acaccaacat    420
tgataaccga catgagatgc tgaccctgga gcctctgcat acgctgctac acacgaaatg   480
gaagaaattt gccaagtaca tgttcttctt gtccttctgc ttctatttct tctacaacat   540
caccctgacc cttgtctctt actaccgtcc tcgggaagat gaggagttcc cacaccctt    600
ggccctgaca cacaaaatga gttggcttca gctcctaggg aggatgtttg tcctcatctg   660
ggccacatgc atctctgtga aagaaggcat tgccattttc ctgctgagac cctccgatct   720
tcagtccatc ctgtcagatg cctggtttca ctttgtcttt tttgtccaag ctgtacttgt   780
gatactgtct gtattcttgt acttgtttgc ctacaaagaa tacctcgcct gcctcgtgct   840
ggccatggcc ctgggctggg cgaacatgct ctactacacg agaggcttcc agtctatggg   900
catgtcagcc gtcatgatcc agaaggtcat tttgcatgat gtcctccaagt tcttgtttgt   960
ttacatcctg ttcttacttg gatttggagt agcgctggcc tcactgattg agaagtgctc  1020
caaggacaaa aaggactgca gttcctatgg cagcttcagc gaca                    1064
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<223> Primer

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<210> 157
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<213> Artificial Sequence

<220>
<223> Primer

<400> 157
gtcgctgaag ctgccatagg aactg   25

<210> 158
<211> 22
<212> DNA
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<220>
<223> Primer

<400> 158
ctgagaccct ccgatcttca gt   22

<210> 159
<211> 22
<212> DNA
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<400> 159
ggcaggcgag gtattctttg ta   22

<210> 160
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<223> Probe

<400> 160
cctgtcagat gcctggtttc actttgtctt   30

<210> 161
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<212> DNA
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<220>
<223> Primer

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cggggtaccg tcgacatgaa agcccacccc aagg   34

<210> 162
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<220>
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<400> 164
gacacgggga agacctgcct gatg   24

<210> 165
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<212> DNA
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<220>
<223> Primer

<400> 165
gtggcaactg ggagctggag acc   23

<210> 166

<211> 24
<212> DNA
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<400> 166
gggccatgtg catctctgtg aaag   24

<210> 167
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<400> 167
ctgatgggcg agactgtgga g   21

<210> 168
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<212> DNA
<213> Artificial Sequence

<220>
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<400> 168
tagaaggcac agtcgagg   18

<210> 169
<211> 21
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<400> 169
ctccacagtc tcgcccatca g   21

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<400> 170
ctttcacaga gatgcacatg gccc   24

<210> 171
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<400> 171

ggtctccagc tcccagttgc cac   23

<210> 172
<211> 24
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<213> Artificial Sequence

<220>
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<400> 172
catcaggcag gtcttccccg tgtc   24

<210> 173
<211> 348
<212> PRT
<213> Human

<400> 173

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                20                  25                  30
Val Leu Ser Thr Val Leu Thr Ile Leu Leu Ala Leu Val Met Phe Ser
            35                  40                  45
Met Gly Cys Asn Val Glu Ile Lys Lys Phe Leu Gly His Ile Lys Arg
        50                  55                  60
Pro Trp Gly Ile Cys Val Gly Phe Leu Cys Gln Phe Gly Ile Met Pro
65                  70                  75                  80
Leu Thr Gly Phe Ile Leu Ser Val Ala Phe Asp Ile Leu Pro Leu Gln
                85                  90                  95
Ala Val Val Val Leu Ile Ile Gly Cys Cys Pro Gly Gly Thr Ala Ser
                100                 105                 110
Asn Ile Leu Ala Tyr Trp Val Asp Gly Asp Met Asp Leu Ser Val Ser
            115                 120                 125
Met Thr Thr Cys Ser Thr Leu Leu Ala Leu Gly Met Met Pro Leu Cys
        130                 135                 140
Leu Leu Ile Tyr Thr Lys Met Trp Val Asp Ser Gly Ser Ile Val Ile
145                 150                 155                 160
Pro Tyr Asp Asn Ile Gly Thr Ser Leu Val Ala Leu Val Val Pro Val
                165                 170                 175
Ser Ile Gly Met Phe Val Asn His Lys Trp Pro Gln Lys Ala Lys Ile
                180                 185                 190
Ile Leu Lys Ile Gly Ser Ile Ala Gly Ala Ile Leu Ile Val Leu Ile
            195                 200                 205
Ala Val Val Gly Gly Ile Leu Tyr Gln Ser Ala Trp Ile Ile Ala Pro
        210                 215                 220
Lys Leu Trp Ile Ile Gly Thr Ile Phe Pro Val Ala Gly Tyr Ser Leu
225                 230                 235                 240
Gly Phe Leu Leu Ala Arg Ile Ala Gly Leu Pro Trp Tyr Arg Cys Arg
                245                 250                 255
Thr Val Ala Phe Glu Thr Gly Met Gln Asn Thr Gln Leu Cys Ser Thr
                260                 265                 270
Ile Val Gln Leu Ser Phe Thr Pro Glu Glu Leu Asn Val Val Phe Thr
            275                 280                 285
Phe Pro Leu Ile Tyr Ser Ile Phe Gln Leu Ala Phe Ala Ala Ile Phe
        290                 295                 300
Leu Gly Phe Tyr Val Ala Tyr Lys Lys Cys His Gly Lys Asn Lys Ala
305                 310                 315                 320
Glu Ile Pro Glu Ser Lys Glu Asn Gly Thr Glu Pro Glu Ser Ser Phe
                325                 330                 335
Tyr Lys Ala Asn Gly Gly Phe Gln Pro Asp Glu Lys
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Q101072 US-SEQ.txt

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<210>  174
<211>  717
<212>  PRT
<213>  Rat

<400>  174

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Leu Leu Met Val Leu Thr Cys Leu Glu Ala Ser Ser Tyr Val Asn Glu
                20                  25                  30
Ser Ser Ser Pro Thr Gly Gln Gln Thr Pro Asp Ala Arg Phe Ala Ala
        35                  40                  45
Ser Ser Ser Asp Pro Asp Glu Arg Ile Ser Val Phe Glu Leu Asp Tyr
    50                  55                  60
Asp Tyr Val Gln Ile Pro Tyr Glu Val Thr Val Trp Leu Ile Leu Ala
65                  70                  75                  80
Ser Leu Ala Lys Ile Gly Phe His Leu Tyr His Arg Leu Pro His Leu
                85                  90                  95
Met Pro Glu Ser Cys Leu Leu Ile Ile Val Gly Ala Leu Val Gly Ser
            100                 105                 110
Ile Ile Phe Gly Thr His His Lys Ser Pro Pro Val Met Asp Ser Ser
        115                 120                 125
Ile Tyr Phe Leu Tyr Leu Leu Pro Pro Ile Val Leu Glu Ser Gly Tyr
    130                 135                 140
Phe Met Pro Thr Arg Pro Phe Phe Glu Asn Ile Gly Ser Ile Leu Trp
145                 150                 155                 160
Trp Ala Gly Leu Gly Ala Leu Ile Asn Ala Phe Gly Ile Gly Leu Ser
                165                 170                 175
Leu Tyr Phe Ile Cys Gln Ile Lys Ala Phe Gly Leu Gly Asp Ile Asn
            180                 185                 190
Leu Leu Gln Asn Leu Leu Phe Gly Ser Leu Ile Ser Ala Val Asp Pro
        195                 200                 205
Val Ala Val Leu Ala Val Phe Glu Glu Ala Arg Val Asn Glu Gln Leu
    210                 215                 220
Tyr Met Met Ile Phe Gly Glu Ala Leu Leu Asn Asp Gly Ile Ser Val
225                 230                 235                 240
Val Leu Tyr Asn Ile Leu Ile Ala Phe Thr Lys Met His Lys Phe Glu
                245                 250                 255
Asp Ile Glu Ala Val Asp Ile Leu Ala Gly Cys Ala Arg Phe Val Ile
            260                 265                 270
Val Gly Cys Gly Gly Val Phe Phe Gly Ile Ile Phe Gly Phe Ile Ser
        275                 280                 285
Ala Phe Ile Thr Arg Phe Thr Gln Asn Ile Ser Ala Ile Glu Pro Leu
    290                 295                 300
Ile Val Phe Met Phe Ser Tyr Leu Ser Tyr Leu Val Ala Ala Glu Thr Leu
305                 310                 315                 320
Tyr Leu Ser Gly Ile Leu Ala Ile Thr Ala Cys Ala Val Thr Met Lys
                325                 330                 335
Lys Tyr Val Glu Glu Asn Val Ser Gln Thr Ser Tyr Thr Thr Ile Lys
            340                 345                 350
Tyr Phe Met Lys Met Leu Ser Ser Val Ser Glu Thr Leu Ile Phe Ile
        355                 360                 365
Phe Met Gly Val Ser Thr Val Gly Lys Asn His Glu Trp Asn Trp Ala
    370                 375                 380
Phe Val Cys Phe Thr Leu Ala Phe Cys Gln Ile Trp Arg Ala Ile Ser
385                 390                 395                 400
Val Phe Thr Leu Phe Tyr Val Ser Asn Gln Phe Arg Thr Phe Pro Phe
                405                 410                 415
Ser Ile Lys Asp Gln Leu Ile Ile Phe Tyr Ser Gly Val Arg Gly Ala
            420                 425                 430
```

```
Gly Ser Phe Ser Leu Ala Phe Leu Leu Pro Leu Thr Leu Phe Pro Arg
    435                 440                 445
Lys Lys Leu Phe Val Thr Ala Thr Leu Val Val Thr Thr Phe Thr Val
    450                 455                 460
Phe Phe Gln Gly Ile Thr Ile Gly Pro Leu Val Arg Tyr Leu Asp Val
465                 470                 475                 480
Arg Lys Thr Asn Lys Lys Glu Ser Ile Asn Glu Glu Leu His Ile Arg
                485                 490                 495
Leu Met Asp His His Leu Lys Ala Gly Ile Glu Asp Val Cys Gly Gln Trp
            500                 505                 510
Ser His Tyr Gln Val Arg Asp Lys Phe Lys Lys Phe Asp His Arg Tyr
        515                 520                 525
Leu Arg Lys Ile Leu Ile Arg Arg Asn Gln Pro Lys Ser Ser Ile Val
    530                 535                 540
Ser Leu Tyr Lys Lys Leu Glu Met Lys Gln Ala Ile Glu Met Ala Glu
545                 550                 555                 560
Thr Gly Leu Leu Ser Ser Val Ala Ser Pro Thr Pro Tyr Gln Ser Glu
                565                 570                 575
Arg Ile Gln Gly Ile Lys Arg Leu Ser Pro Glu Asp Val Glu Ser Met
        580                 585                 590
Arg Asp Ile Leu Thr Arg Asn Met Tyr Gln Val Arg Gln Arg Thr Leu
    595                 600                 605
Ser Tyr Asn Lys Tyr Asn Leu Lys Pro Gln Thr Ser Glu Lys Gln Ala
    610                 615                 620
Lys Glu Ile Leu Ile Arg Arg Gln Asn Thr Leu Arg Glu Ser Leu Arg
625                 630                 635                 640
Lys Gly Gln Ser Leu Pro Trp Val Lys Pro Ala Gly Thr Lys Asn Phe
                645                 650                 655
Arg Tyr Leu Ser Phe Pro Tyr Ser Asn Pro Gln Pro Ala Arg Arg Gly
        660                 665                 670
Ala Arg Ala Ala Glu Ser Thr Gly Asn Pro Cys Cys Trp Leu Leu His
    675                 680                 685
Phe Leu Leu Cys Arg Ala Met Val Glu Lys Ile Trp Gly Pro Gly Gly
    690                 695                 700
Gln Glu Thr Gln Pro Arg Leu Leu Cys Arg Asn Leu Asn
705                 710                 715
```

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<210>  175
<211>  812
<212>  PRT
<213>  Human

<400>  175
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Met Glu Pro Leu Gly Asn Trp Arg Ser Leu Arg Ala Pro Leu Pro Pro
1                   5                   10                  15
Met Leu Leu Leu Leu Leu Leu Gln Val Ala Gly Pro Val Gly Ala Leu
            20                  25                  30
Ala Glu Thr Leu Leu Asn Ala Pro Arg Ala Met Gly Thr Ser Ser Ser
        35                  40                  45
Pro Pro Ser Pro Ala Ser Val Val Ala Pro Gly Thr Thr Leu Phe Glu
    50                  55                  60
Glu Ser Arg Leu Pro Val Phe Thr Leu Asp Tyr Pro His Val Gln Ile
65                  70                  75                  80
Pro Phe Glu Ile Thr Leu Trp Ile Leu Leu Ala Ser Leu Ala Lys Ile
            85                  90                  95
Gly Phe His Leu Tyr His Lys Leu Pro Thr Ile Val Pro Glu Ser Cys
        100                 105                 110
Leu Leu Ile Met Val Gly Leu Leu Leu Gly Gly Ile Ile Phe Gly Val
    115                 120                 125
Asp Glu Lys Ser Pro Pro Ala Met Lys Thr Asp Val Phe Phe Leu Tyr
    130                 135                 140
Leu Leu Pro Pro Ile Val Leu Asp Ala Gly Tyr Phe Met Pro Thr Arg
```

```
145                     150                     155                          160
Pro Phe Phe Glu Asn Ile Gly Thr Ile Phe Trp Tyr Ala Val Val Gly
                165                     170                     175
Thr Leu Trp Asn Ser Ile Gly Ile Gly Val Ser Leu Phe Gly Ile Cys
            180                     185                     190
Gln Ile Glu Ala Phe Gly Leu Ser Asp Ile Thr Leu Leu Gln Asn Leu
        195                     200                     205
Leu Phe Gly Ser Leu Ile Ser Ala Val Asp Pro Val Ala Val Leu Ala
    210                     215                     220
Val Phe Glu Asn Ile His Val Asn Glu Gln Leu Tyr Ile Leu Val Phe
225                     230                     235                     240
Gly Glu Ser Leu Leu Asn Asp Ala Val Thr Val Val Leu Tyr Asn Leu
                245                     250                     255
Phe Lys Ser Phe Cys Gln Met Lys Thr Ile Glu Thr Ile Asp Val Phe
            260                     265                     270
Ala Gly Ile Ala Asn Phe Phe Val Val Gly Ile Gly Gly Val Leu Ile
        275                     280                     285
Gly Ile Phe Leu Gly Phe Ile Ala Phe Thr Thr Arg Phe Thr His
    290                     295                     300
Asn Ile Arg Val Ile Glu Pro Leu Phe Val Phe Leu Tyr Ser Tyr Leu
305                     310                     315                     320
Ser Tyr Ile Thr Ala Glu Met Phe His Leu Ser Gly Ile Met Ala Ile
                325                     330                     335
Thr Ala Cys Ala Met Thr Met Asn Lys Tyr Val Glu Glu Asn Val Ser
            340                     345                     350
Gln Lys Ser Tyr Thr Thr Ile Lys Tyr Phe Met Lys Met Leu Ser Ser
        355                     360                     365
Val Ser Glu Thr Leu Ile Phe Ile Phe Met Gly Val Ser Thr Val Gly
    370                     375                     380
Lys Asn His Glu Trp Asn Trp Ala Phe Val Cys Phe Thr Leu Ala Phe
385                     390                     395                     400
Cys Leu Met Trp Arg Ala Leu Gly Val Phe Val Leu Thr Gln Val Ile
                405                     410                     415
Asn Arg Phe Arg Thr Ile Pro Leu Thr Phe Lys Asp Gln Phe Ile Ile
            420                     425                     430
Ala Tyr Gly Gly Leu Arg Gly Ala Ile Cys Phe Ala Leu Val Phe Leu
        435                     440                     445
Leu Pro Ala Ala Val Phe Pro Arg Lys Lys Leu Phe Ile Thr Ala Ala
    450                     455                     460
Ile Val Val Ile Phe Phe Thr Val Phe Ile Leu Gly Ile Thr Ile Arg
465                     470                     475                     480
Pro Leu Val Glu Phe Leu Asp Val Lys Arg Ser Asn Lys Lys Gln Gln
                485                     490                     495
Ala Val Ser Glu Glu Ile Tyr Cys Arg Leu Phe Asp His Val Lys Thr
            500                     505                     510
Gly Ile Glu Asp Val Cys Gly His Trp Gly His Asn Phe Trp Arg Asp
        515                     520                     525
Lys Phe Lys Lys Phe Asp Asp Lys Tyr Leu Arg Lys Leu Leu Ile Arg
    530                     535                     540
Glu Asn Gln Pro Lys Ser Ser Ile Val Ser Leu Tyr Lys Lys Leu Glu
545                     550                     555                     560
Ile Lys His Ala Ile Glu Met Ala Glu Thr Gly Met Ile Ser Thr Val
                565                     570                     575
Pro Thr Phe Ala Ser Leu Asn Asp Cys Arg Glu Glu Leu Lys Ile Arg Lys
            580                     585                     590
Val Thr Ser Ser Glu Thr Asp Glu Ile Arg Glu Leu Leu Ser Arg Asn
        595                     600                     605
Leu Tyr Gln Ile Arg Gln Arg Thr Leu Ser Tyr Asn Arg His Ser Leu
    610                     615                     620
Thr Ala Asp Thr Ser Glu Arg Gln Ala Lys Glu Ile Leu Ile Arg Arg
625                     630                     635                     640
Arg His Ser Leu Arg Glu Ser Ile Arg Lys Asp Ser Ser Leu Asn Arg
                645                     650                     655
                                Page 51
```

```
Glu His Arg Ala Ser Thr Ser Thr Ser Arg Tyr Leu Ser Leu Pro Lys
            660                 665                 670
Asn Thr Lys Leu Pro Glu Lys Leu Gln Lys Arg Arg Thr Ile Ser Ile
            675                 680                 685
Ala Asp Gly Asn Ser Ser Asp Ser Asp Ala Asp Ala Gly Thr Thr Val
    690                 695                 700
Leu Asn Leu Gln Pro Arg Ala Arg Arg Phe Leu Pro Glu Gln Phe Ser
705                 710                 715                 720
Lys Lys Ser Pro Gln Ser Tyr Lys Met Glu Trp Lys Asn Glu Val Asp
                725                 730                 735
Val Asp Ser Gly Arg Asp Met Pro Ser Thr Pro Pro Thr Pro His Ser
            740                 745                 750
Arg Glu Lys Gly Thr Gln Thr Ser Gly Leu Leu Gln Gln Pro Leu Leu
            755                 760                 765
Ser Lys Asp Gln Ser Gly Ser Glu Arg Glu Asp Ser Leu Thr Glu Gly
    770                 775                 780
Ile Pro Pro Lys Pro Pro Pro Arg Leu Val Trp Arg Ala Ser Glu Pro
785                 790                 795                 800
Gly Ser Arg Lys Ala Arg Phe Gly Ser Glu Lys Pro
                805                 810


<210>  176
<211>  1164
<212>  PRT
<213>  Human

<400>  176

Met Pro Thr Met Arg Arg Thr Val Ser Glu Ile Arg Ser Arg Ala Glu
1                   5                   10                  15
Gly Tyr Glu Lys Thr Asp Asp Val Ser Glu Lys Thr Ser Leu Ala Asp
            20                  25                  30
Gln Glu Glu Val Arg Thr Ile Phe Ile Asn Gln Ile Asn Gln Leu Thr Lys
        35                  40                  45
Phe Cys Asn Asn His Val Ser Thr Ala Lys Tyr Asn Ile Ile Thr Phe
    50                  55                  60
Leu Pro Arg Phe Leu Tyr Ser Gln Phe Arg Arg Ala Ala Asn Ser Phe
65                  70                  75                  80
Phe Leu Phe Ile Ala Leu Leu Gln Gln Ile Pro Asp Val Ser Pro Thr
                85                  90                  95
Gly Arg Tyr Thr Thr Leu Val Pro Leu Leu Phe Ile Leu Ala Val Ala
            100                 105                 110
Ala Ile Lys Glu Ile Ile Glu Asp Ile Lys Arg His Lys Ala Asp Asn
    115                 120                 125
Ala Val Asn Lys Lys Gln Thr Gln Val Leu Arg Asn Gly Ala Trp Glu
    130                 135                 140
Ile Val His Trp Glu Lys Val Ala Val Gly Glu Ile Val Lys Val Thr
145                 150                 155                 160
Asn Gly Glu His Leu Pro Ala Asp Leu Ile Ser Leu Ser Ser Ser Glu
                165                 170                 175
Pro Gln Ala Met Cys Tyr Ile Glu Thr Ser Asn Leu Asp Gly Glu Thr
            180                 185                 190
Asn Leu Lys Ile Arg Gln Gly Leu Pro Ala Thr Ser Asp Ile Lys Asp
    195                 200                 205
Val Asp Ser Leu Met Arg Ile Ser Gly Arg Ile Glu Cys Glu Ser Pro
    210                 215                 220
Asn Arg His Leu Tyr Asp Phe Val Gly Asn Ile Arg Leu Asp Gly His
225                 230                 235                 240
Gly Thr Val Pro Leu Gly Ala Asp Gln Ile Leu Leu Arg Gly Ala Gln
                245                 250                 255
Leu Arg Asn Thr Gln Trp Val His Gly Ile Val Val Tyr Thr Gly His
            260                 265                 270
Asp Thr Lys Leu Met Gln Asn Ser Thr Ser Pro Pro Leu Lys Leu Ser
```

```
        275                     280                     285
Asn Val Glu Arg Ile Thr Asn Val Gln Ile Leu Ile Leu Phe Cys Ile
    290                     295                     300
Leu Ile Ala Met Ser Leu Val Cys Ser Val Gly Ser Ala Ile Trp Asn
305                     310                     315                 320
Arg Arg His Ser Gly Lys Asp Trp Tyr Leu Asn Leu Asn Tyr Gly Gly
                    325                     330                     335
Ala Ser Asn Phe Gly Leu Asn Phe Leu Thr Phe Ile Ile Leu Phe Asn
                340                     345                     350
Asn Leu Ile Pro Ile Ser Leu Leu Val Thr Leu Glu Val Val Lys Phe
            355                     360                     365
Thr Gln Ala Tyr Phe Ile Asn Trp Asp Leu Asp Met His Tyr Glu Pro
        370                     375                     380
Thr Asp Thr Ala Ala Met Ala Arg Thr Ser Asn Leu Asn Glu Glu Leu
    385                     390                     395                 400
Gly Gln Val Lys Tyr Ile Phe Ser Asp Lys Thr Gly Thr Leu Thr Cys
                    405                     410                     415
Asn Val Met Gln Phe Lys Lys Cys Thr Ile Ala Gly Val Ala Tyr Gly
                420                     425                     430
His Val Pro Glu Pro Glu Asp Tyr Cys Ser Pro Asp Glu Trp Gln
            435                     440                     445
Asn Ser Gln Phe Gly Asp Glu Lys Thr Phe Ser Asp Ser Ser Leu Leu
        450                     455                     460
Glu Asn Leu Gln Asn Asn His Pro Thr Ala Pro Ile Ile Cys Glu Phe
    465                     470                     475                 480
Leu Thr Met Met Ala Val Cys His Thr Ala Val Pro Glu Arg Glu Gly
                    485                     490                     495
Asp Lys Ile Ile Tyr Gln Ala Ala Ser Pro Asp Glu Gly Ala Leu Val
                500                     505                     510
Arg Ala Ala Lys Gln Leu Asn Phe Val Phe Thr Gly Arg Thr Pro Asp
            515                     520                     525
Ser Val Ile Ile Asp Ser Leu Gly Gln Glu Glu Arg Tyr Glu Leu Leu
        530                     535                     540
Asn Val Leu Glu Phe Thr Ser Ala Arg Lys Arg Met Ser Val Ile Val
    545                     550                     555                 560
Arg Thr Pro Ser Gly Lys Leu Arg Leu Tyr Cys Lys Gly Ala Asp Thr
                565                     570                     575
Val Ile Tyr Asp Arg Leu Ala Glu Thr Ser Lys Tyr Lys Glu Ile Thr
            580                     585                     590
Leu Lys His Leu Glu Gln Phe Ala Thr Glu Gly Leu Arg Thr Leu Cys
        595                     600                     605
Phe Ala Val Ala Glu Ile Ser Glu Ser Asp Phe Gln Glu Trp Arg Ala
    610                     615                     620
Val Tyr Gln Arg Ala Ser Thr Ser Val Gln Asn Arg Leu Leu Lys Leu
625                     630                     635                 640
Glu Glu Ser Tyr Glu Leu Ile Glu Lys Asn Leu Gln Leu Leu Gly Ala
                    645                     650                     655
Thr Ala Ile Glu Asp Lys Leu Gln Asp Gln Val Pro Glu Thr Ile Glu
                660                     665                     670
Thr Leu Met Lys Ala Asp Ile Lys Ile Trp Ile Leu Thr Gly Asp Lys
            675                     680                     685
Gln Glu Thr Ala Ile Asn Ile Gly His Ser Cys Lys Leu Leu Lys Lys
        690                     695                     700
Asn Met Gly Met Ile Val Ile Asn Glu Gly Ser Leu Asp Gly Thr Arg
    705                     710                     715                 720
Glu Thr Leu Ser Arg His Cys Thr Thr Leu Gly Asp Ala Leu Arg Lys
                725                     730                     735
Glu Asn Asp Phe Ala Leu Ile Ile Asp Gly Lys Thr Leu Lys Tyr Ala
                740                     745                     750
Leu Thr Phe Gly Val Arg Gln Tyr Phe Leu Asp Leu Ala Leu Ser Cys
            755                     760                     765
Lys Ala Val Ile Cys Cys Arg Val Ser Pro Leu Gln Lys Ser Glu Val
    770                     775                     780
```

```
Val Glu Met Val Lys Lys Gln Lys Val Val Thr Leu Ala Ile Gly
785                 790                 795                 800
Asp Gly Ala Asn Asp Val Ser Met Ile Gln Thr Ala His Val Gly Val
                805                 810                 815
Gly Ile Ser Gly Asn Glu Gly Leu Gln Ala Ala Asn Ser Ser Asp Tyr
                825                 830
Ser Ile Ala Gln Phe Lys Tyr Leu Lys Asn Leu Leu Met Ile His Gly
        835                 840                 845
Ala Trp Asn Tyr Asn Arg Val Ser Lys Cys Ile Leu Tyr Cys Phe Tyr
        850                 855                 860
Lys Asn Ile Val Leu Tyr Ile Ile Glu Ile Trp Phe Ala Phe Val Asn
865                 870                 875                 880
Gly Phe Ser Gly Gln Ile Leu Phe Glu Arg Trp Cys Ile Gly Leu Tyr
                885                 890                 895
Asn Val Met Phe Thr Ala Met Pro Pro Leu Thr Leu Gly Ile Phe Glu
                900                 905                 910
Arg Ser Cys Arg Lys Glu Asn Met Leu Lys Tyr Pro Glu Leu Tyr Lys
        915                 920                 925
Thr Ser Gln Asn Ala Leu Asp Phe Asn Thr Lys Val Phe Trp Val His
        930                 935                 940
Cys Leu Asn Gly Leu Phe His Ser Val Ile Leu Phe Trp Phe Pro Leu
945                 950                 955                 960
Lys Ala Leu Gln Tyr Gly Thr Ala Phe Gly Asn Gly Lys Thr Ser Asp
                965                 970                 975
Tyr Leu Leu Leu Gly Asn Phe Val Tyr Thr Phe Val Val Ile Thr Val
            980                 985                 990
Cys Leu Lys Ala Gly Leu Glu Thr  Ser Tyr Trp Thr Trp  Phe Ser His
            995                 1000                1005
Ile Ala  Ile Trp Gly Ser Ile  Ala Leu Trp Val Val  Phe Phe Gly
    1010                1015                1020
Ile Tyr  Ser Ser Leu Trp Pro  Ala Ile Pro Met Ala  Pro Asp Met
    1025                1030                1035
Ser Gly  Glu Ala Ala Met Leu  Phe Ser Ser Gly Val  Phe Trp Met
    1040                1045                1050
Gly Leu  Leu Phe Ile Pro Val  Ala Ser Leu Leu Leu  Asp Val Val
    1055                1060                1065
Tyr Lys  Val Ile Lys Arg Thr  Ala Phe Lys Thr Leu  Val Asp Glu
    1070                1075                1080
Val Gln  Glu Leu Glu Ala Lys  Ser Gln Asp Pro Gly  Ala Val Val
    1085                1090                1095
Leu Gly  Lys Ser Leu Thr Glu  Arg Ala Gln Leu Leu  Lys Asn Val
    1100                1105                1110
Phe Lys  Lys Asn His Val Asn  Leu Tyr Arg Ser Glu  Ser Leu Gln
    1115                1120                1125
Gln Asn  Leu Leu His Gly Tyr  Ala Phe Ser Gln Asp  Glu Asn Gly
    1130                1135                1140
Ile Val  Ser Gln Ser Glu Val  Ile Arg Ala Tyr Asp  Thr Thr Lys
    1145                1150                1155
Gln Arg  Pro Asp Glu Trp
    1160


<210>  177
<211>  1148
<212>  PRT
<213>  Mouse

<400>  177

Met Ser Arg Ala Thr Ser Val Gly Asp Gln Leu Glu Ala Pro Ala Arg
1               5                  10                  15
Ile Ile Tyr Tyr Leu Asn Gln Ser His Leu Asn Lys Phe Cys Asp Asn Arg
            20                  25                  30
Ile Ser Thr Ala Lys Tyr Ser Val Leu Thr Phe Leu Pro Arg Phe Leu
                            Page 54
```

```
            35                      40                      45
Tyr Glu Gln Ile Arg Arg Ala Ala Asn Ala Phe Phe Leu Phe Ile Ala
    50                      55                      60
Leu Leu Gln Gln Ile Pro Asp Val Ser Pro Thr Gly Arg Tyr Thr Thr
65                      70                      75                      80
Leu Val Pro Leu Val Ile Ile Leu Thr Ile Ala Gly Ile Lys Glu Ile
                    85                      90                      95
Ile Glu Asp Phe Lys Arg His Lys Ala Asp Asn Ala Val Ala Lys Lys
            100                     105                     110
Lys Thr Ile Val Leu Arg Asn Gly Met Trp His Thr Ile Met Trp Lys
            115                     120                     125
Glu Val Ala Val Gly Asp Ile Val Lys Val Leu Asn Gly Gln Tyr Leu
        130                     135                     140
Pro Ala Asp Met Val Leu Phe Ser Ser Ser Glu Pro Gln Gly Met Cys
145                     150                     155                     160
Tyr Val Glu Thr Ala Asn Leu Asp Gly Glu Thr Asn Leu Lys Ile Arg
                    165                     170                     175
Gln Gly Leu Ser His Thr Thr Asp Met Gln Thr Arg Asp Val Leu Met
            180                     185                     190
Lys Leu Ser Gly Arg Ile Glu Cys Glu Gly Pro Asn Arg His Leu Tyr
        195                     200                     205
Asp Phe Thr Gly Asn Leu His Leu Asp Gly Lys Ser Ser Val Ala Leu
    210                     215                     220
Gly Pro Asp Gln Ile Leu Leu Arg Gly Thr Gln Leu Arg Asn Thr Gln
225                     230                     235                     240
Trp Val Phe Gly Val Val Val Tyr Thr Gly His Asp Ser Lys Leu Met
                    245                     250                     255
Gln Asn Ser Thr Lys Ala Pro Leu Lys Arg Ser Asn Val Glu Lys Val
            260                     265                     270
Thr Asn Val Gln Ile Leu Val Leu Phe Gly Ile Leu Leu Val Met Ala
        275                     280                     285
Leu Val Ser Ser Val Gly Ala Leu Phe Trp Asn Gly Ser His Gly Gly
290                     295                     300
Lys Ser Trp Tyr Ile Lys Lys Met Asp Thr Asn Ser Asp Asn Phe Gly
305                     310                     315                     320
Tyr Asn Leu Leu Thr Phe Ile Ile Leu Tyr Asn Asn Leu Ile Pro Ile
            325                     330                     335
Ser Leu Leu Val Thr Leu Glu Val Val Lys Tyr Thr Gln Ala Leu Phe
        340                     345                     350
Ile Asn Trp Asp Met Asp Met Tyr Tyr Ile Glu Asn Asp Thr Pro Ala
    355                     360                     365
Met Ala Arg Thr Ser Asn Leu Asn Glu Glu Leu Gly Gln Val Lys Tyr
370                     375                     380
Leu Phe Ser Asp Lys Thr Gly Thr Leu Thr Cys Asn Ile Met Asn Phe
385                     390                     395                     400
Lys Lys Cys Ser Ile Ala Gly Val Thr Tyr Gly His Phe Pro Glu Leu
            405                     410                     415
Ala Arg Glu Gln Ser Ser Asp Asp Phe Cys Arg Met Thr Ser Cys Thr
        420                     425                     430
Asn Asp Ser Cys Asp Phe Asn Asp Pro Arg Leu Leu Lys Asn Ile Glu
        435                     440                     445
Asp Gln His Pro Thr Ala Pro Cys Ile Glu Phe Leu Thr Leu Leu
    450                     455                     460
Ala Val Cys His Thr Val Val Pro Glu Lys Asp Gly Asp Glu Ile Ile
465                     470                     475                     480
Tyr Gln Ala Ser Ser Pro Asp Glu Ala Ala Leu Val Lys Gly Ala Lys
                    485                     490                     495
Lys Leu Gly Phe Val Phe Thr Gly Arg Thr Pro Tyr Ser Val Ile Ile
        500                     505                     510
Glu Ala Met Gly Gln Glu Gln Thr Phe Gly Ile Leu Asn Val Leu Glu
        515                     520                     525
Phe Ser Ser Asp Arg Lys Arg Met Ser Val Ile Val Arg Leu Pro Ser
    530                     535                     540
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Gly Gln Leu Arg Leu Tyr Cys Lys Gly Ala Asp Asn Val Ile Phe Glu
545                 550                 555                 560
Arg Leu Ser Lys Asp Ser Lys Tyr Met Glu Glu Thr Leu Cys His Leu
                565                 570                 575
Glu Tyr Phe Ala Thr Glu Gly Leu Arg Thr Leu Cys Val Ala Tyr Ala
            580                 585                 590
Asp Leu Ser Glu Asn Glu Tyr Glu Glu Trp Leu Lys Val Tyr Gln Glu
        595                 600                 605
Ala Ser Ile Ile Leu Lys Asp Arg Ala Gln Arg Leu Glu Glu Cys Tyr
    610                 615                 620
Glu Ile Ile Glu Lys Asn Leu Leu Leu Leu Gly Ala Thr Ala Ile Glu
625                 630                 635                 640
Asp Arg Leu Gln Ala Gly Val Pro Glu Thr Ile Ala Thr Leu Leu Lys
                645                 650                 655
Ala Glu Ile Lys Ile Trp Val Leu Thr Gly Asp Lys Gln Glu Thr Ala
            660                 665                 670
Ile Asn Ile Gly Tyr Ser Cys Arg Leu Val Ser Gln Asn Met Ala Leu
        675                 680                 685
Ile Leu Leu Lys Glu Asp Ser Leu Asp Ala Thr Arg Ala Ala Ile Thr
    690                 695                 700
Gln His Cys Thr Asp Leu Gly Asn Leu Leu Gly Lys Glu Asn Asp Val
705                 710                 715                 720
Ala Leu Ile Ile Asp Gly His Thr Leu Lys Tyr Ala Leu Ser Phe Glu
                725                 730                 735
Val Arg Arg Ser Phe Leu Asp Leu Ala Leu Ser Cys Lys Ala Val Ile
            740                 745                 750
Cys Cys Arg Val Ser Pro Leu Gln Lys Ser Glu Ile Val Asp Val Val
        755                 760                 765
Lys Lys Arg Val Lys Ala Ile Thr Leu Ala Ile Gly Asp Gly Ala Asn
    770                 775                 780
Asp Val Gly Met Ile Gln Thr Ala His Val Gly Val Gly Ile Ser Gly
785                 790                 795                 800
Asn Glu Gly Met Gln Ala Thr Asn Asn Ser Asp Tyr Ala Ile Ala Gln
                805                 810                 815
Phe Ser Tyr Leu Glu Lys Leu Leu Leu Val His Gly Ala Trp Ser Tyr
            820                 825                 830
Asn Arg Val Thr Lys Cys Ile Leu Tyr Cys Phe Tyr Lys Asn Val Val
        835                 840                 845
Leu Tyr Ile Ile Glu Leu Trp Phe Ala Phe Val Asn Gly Phe Ser Gly
    850                 855                 860
Gln Ile Leu Phe Glu Arg Trp Cys Ile Gly Leu Tyr Asn Val Ile Phe
865                 870                 875                 880
Thr Ala Leu Pro Pro Phe Thr Leu Gly Ile Phe Glu Arg Ser Cys Thr
                885                 890                 895
Gln Glu Ser Met Leu Arg Phe Pro Gln Leu Tyr Arg Ile Thr Gln Asn
        900                 905                 910
Ala Glu Gly Phe Asn Thr Lys Val Phe Trp Gly His Cys Ile Asn Ala
    915                 920                 925
Leu Val His Ser Leu Ile Leu Phe Trp Val Pro Met Lys Ala Leu Glu
    930                 935                 940
His Asp Thr Pro Val Thr Ser Gly His Ala Thr Asp Tyr Leu Phe Val
945                 950                 955                 960
Gly Asn Ile Val Tyr Thr Tyr Val Val Val Thr Val Cys Leu Lys Ala
                965                 970                 975
Gly Leu Glu Thr Thr Ala Trp Thr Lys Phe Ser His Leu Ala Val Trp
            980                 985                 990
Gly Ser Met Leu Ile Trp Leu Val  Phe Phe Gly Val Tyr  Ser Thr Ile
        995                 1000                1005
Trp Pro  Thr Ile Pro Ile Ala  Pro Asp Met Lys Gly  Gln Ala Thr
    1010                1015                1020
Met Val  Leu Ser Ser Ala Tyr  Phe Trp Leu Gly Leu  Phe Leu Val
    1025                1030                1035
Pro Thr  Ala Cys Leu Ile Glu  Asp Val Ala Trp Arg  Ala Ala Lys
                            Page 56
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      1040                     1045                     1050
His Thr  Cys Lys Lys Thr Leu  Leu Glu Glu Val Gln  Glu Leu Glu
      1055                     1060                     1065
Thr Lys  Ser Arg Val Met Gly  Lys Ala Met Leu Arg  Asp Ser Asn
      1070                     1075                     1080
Gly Lys  Arg Met Asn Glu Arg  Asp Arg Leu Ile Lys  Arg Leu Ser
      1085                     1090                     1095
Arg Lys  Thr Pro Pro Thr Leu  Phe Arg Thr Gly Ser  Ile Gln Gln
      1100                     1105                     1110
Cys Val  Ser His Gly Tyr Ala  Phe Ser Gln Glu Glu  His Gly Ala
      1115                     1120                     1125
Val Thr  Gln Glu Glu Ile Val  Arg Ala Tyr Asp Thr  Thr Lys Glu
      1130                     1135                     1140
Asn Ser  Arg Lys Lys
      1145


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<212>  PRT
<213>  Human

<400>  178

Met Lys Lys Trp Ser Ser Thr Asp Leu Gly Ala Ala Ala Asp Pro Leu
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Gln Lys Asp Thr Cys Pro Asp Pro Leu Ala Gly Asp Pro Asn Ser Arg
                20                  25                  30
Pro Pro Pro Ala Lys Pro Gln Leu Ser Thr Ala Lys Ser Arg Thr Arg
            35                  40                  45
Leu Phe Gly Lys Gly Asp Ser Glu Glu Ala Phe Pro Val Asp Cys Pro
        50                  55                  60
His Glu Glu Gly Glu Leu Asp Ser Cys Pro Thr Ile Thr Val Ser Pro
65                  70                  75                  80
Val Ile Thr Ile Gln Arg Pro Gly Asp Gly Pro Thr Gly Ala Arg Leu
                85                  90                  95
Leu Ser Gln Asp Ser Val Ala Ala Ser Thr Glu Lys Thr Leu Arg Leu
                100                 105                 110
Tyr Asp Arg Arg Ser Ile Phe Glu Ala Val Ala Gln Asn Asn Cys Gln
        115                 120                 125
Asp Leu Glu Ser Leu Leu Leu Phe Leu Gln Lys Ser Lys Lys His Leu
    130                 135                 140
Thr Asp Asn Glu Phe Lys Asp Pro Glu Thr Gly Lys Thr Cys Leu Leu
145                 150                 155                 160
Lys Ala Met Leu Asn Leu His Asp Gly Gln Asn Thr Thr Ile Pro Leu
                165                 170                 175
Leu Leu Glu Ile Ala Arg Gln Thr Asp Ser Leu Lys Glu Leu Val Asn
                180                 185                 190
Ala Ser Tyr Thr Asp Ser Tyr Tyr Lys Gly Gln Thr Ala Leu His Ile
        195                 200                 205
Ala Ile Glu Arg Arg Asn Met Ala Leu Val Thr Leu Leu Val Glu Asn
    210                 215                 220
Gly Ala Asp Val Gln Ala Ala Ala Ala His Gly Asp Phe Phe Lys Lys Thr
225                 230                 235                 240
Lys Gly Arg Pro Gly Phe Tyr Phe Gly Glu Leu Pro Leu Ser Leu Ala
                245                 250                 255
Ala Cys Thr Asn Gln Leu Gly Ile Val Lys Phe Leu Leu Gln Asn Ser
            260                 265                 270
Trp Gln Thr Ala Asp Ile Ser Ala Arg Asp Ser Val Gly Asn Thr Val
    275                 280                 285
Leu His Ala Leu Val Glu Val Ala Asp Asn Thr Ala Asp Asn Thr Lys
    290                 295                 300
Phe Val Thr Ser Met Tyr Asn Glu Ile Leu Met Leu Gly Ala Lys Leu
305                 310                 315                 320
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His Pro Thr Leu Lys Leu Glu Glu Leu Thr Asn Lys Lys Gly Met Thr
            325                 330                 335
Pro Leu Ala Leu Ala Ala Gly Thr Gly Lys Ile Gly Val Leu Ala Tyr
            340                 345                 350
Ile Leu Gln Arg Glu Ile Gln Glu Pro Glu Cys Arg His Leu Ser Arg
        355                 360                 365
Lys Phe Thr Glu Trp Ala Tyr Gly Pro Val His Ser Ser Leu Tyr Asp
    370                 375                 380
Leu Ser Cys Ile Asp Thr Cys Glu Lys Asn Ser Val Leu Glu Val Ile
385                 390                 395                 400
Ala Tyr Ser Ser Ser Glu Thr Pro Asn Arg His Asp Met Leu Leu Val
                405                 410                 415
Glu Pro Leu Asn Arg Leu Leu Gln Asp Lys Trp Asp Arg Phe Val Lys
            420                 425                 430
Arg Ile Phe Tyr Phe Asn Phe Leu Val Tyr Cys Leu Tyr Met Ile Ile
        435                 440                 445
Phe Thr Met Ala Ala Tyr Tyr Arg Pro Val Asp Gly Leu Pro Pro Phe
    450                 455                 460
Lys Met Glu Lys Thr Gly Asp Tyr Phe Arg Val Thr Gly Glu Ile Leu
465                 470                 475                 480
Ser Val Leu Gly Gly Val Tyr Phe Phe Phe Arg Gly Ile Gln Tyr Phe
                485                 490                 495
Leu Gln Arg Arg Pro Ser Met Lys Thr Leu Phe Val Asp Ser Tyr Ser
            500                 505                 510
Glu Met Leu Phe Phe Leu Gln Ser Leu Phe Met Leu Ala Thr Val Val
        515                 520                 525
Leu Tyr Phe Ser His Leu Lys Glu Tyr Val Ala Ser Met Val Phe Ser
    530                 535                 540
Leu Ala Leu Gly Trp Thr Asn Met Leu Tyr Tyr Thr Arg Gly Phe Gln
545                 550                 555                 560
Gln Met Gly Ile Tyr Ala Val Met Ile Glu Lys Met Ile Leu Arg Asp
                565                 570                 575
Leu Cys Arg Arg Pro Met Phe Val Tyr Ile Val Phe Leu Phe Gly Phe Ser
            580                 585                 590
Thr Ala Val Val Thr Phe Leu Ile Glu Asp Gly Lys Asn Asp Ser Leu Pro
        595                 600                 605
Ser Glu Ser Thr Ser His Arg Trp Arg Gly Pro Ala Cys Arg Pro Pro
    610                 615                 620
Asp Ser Ser Tyr Asn Ser Leu Tyr Ser Thr Cys Leu Glu Leu Phe Lys
625                 630                 635                 640
Phe Thr Ile Gly Met Gly Asp Leu Glu Phe Thr Glu Asn Tyr Asp Phe
                645                 650                 655
Lys Ala Val Phe Ile Ile Leu Leu Leu Ala Tyr Val Ile Leu Thr Tyr
            660                 665                 670
Ile Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu Thr Val Asn
        675                 680                 685
Lys Ile Ala Gln Glu Ser Lys Asn Ile Trp Lys Leu Gln Arg Ala Ile
    690                 695                 700
Thr Ile Leu Asp Thr Glu Lys Ser Phe Leu Lys Cys Met Arg Lys Ala
705                 710                 715                 720
Phe Arg Ser Gly Lys Leu Leu Gln Val Gly Tyr Thr Pro Asp Gly Lys
                725                 730                 735
Asp Asp Tyr Arg Trp Cys Phe Arg Val Asp Glu Val Asn Trp Thr Thr
            740                 745                 750
Trp Asn Thr Asn Val Gly Ile Ile Asn Glu Asp Pro Gly Asn Cys Glu
        755                 760                 765
Gly Val Lys Arg Thr Leu Ser Phe Ser Leu Arg Ser Ser Arg Val Ser
    770                 775                 780
Gly Arg His Trp Lys Asn Phe Ala Leu Val Pro Leu Leu Arg Glu Ala
785                 790                 795                 800
Ser Ala Arg Asp Arg Gln Ser Ala Gln Pro Glu Glu Val Tyr Leu Arg
                805                 810                 815
Gln Phe Ser Gly Ser Leu Lys Pro Glu Asp Ala Glu Val Phe Lys Ser
                        Page 58
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                                   825                    830
            820
Pro Ala Ala Ser Gly Glu Lys
        835
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